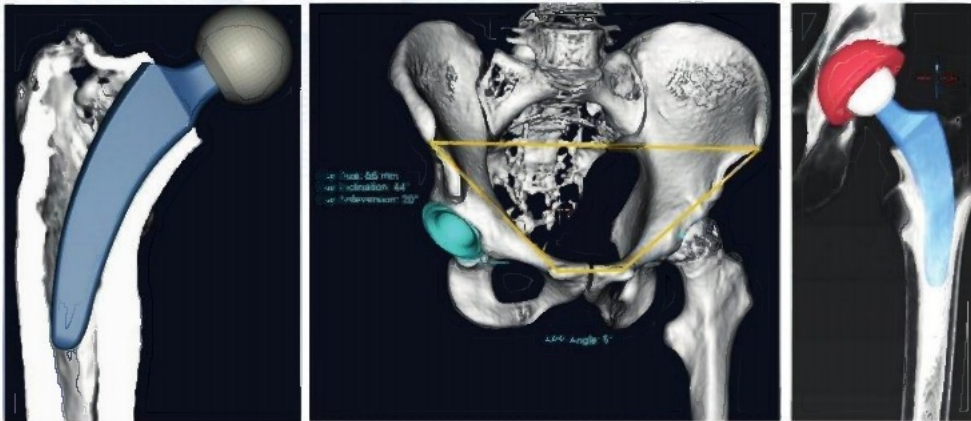


3D Hip

Automatic measurements, 3D measurements, specific measurements
Modern view of 3D and 2D anatomy
Precise planning of primary and revision cases
Bone segmentation and osteotomy
Interactive positioning of implants
3D print link - services
Operation report



mediCAD®



www.imediCAD.cn







Dear Sir or Madam,

Quality care and concern for patients is the main concern for every practicing surgeon in healthcare. That is why digital operation preparation and digital operation planning is the way of the future! Many countries outside of in the world require this preparation by law. As an extra step of precaution for your practice, the use of digital image preparation becomes a seal of quality assurance to your patients and truly sets you apart as a healthcare provider. Digital images are becoming the standard in operation planning and is the basis for successful and efficient implant care.

With the mediCAD[®] Hip 3D software you can utilize this proven approach to plan a joint replacement procedure before the operation occurs, using a high-resolution, three-dimensional CT image. This allows you to choose the most suitable implant dimensions, while also allowing you to plan for precise positioning. Just as importantly, the mediCAD[®] Hip 3D solution can be used to decrease the operation time, providing you with the opportunity to make certain decisions which you normally would have to make during the operation. Rehabilitation can also be accelerated through precise geometric restoration of the hip joint. Finally, complications can be greatly reduced as the mediCAD Hip 3D allows you to view the third level during your surgery preparation and challenges can be resolved before the operation ever occurs.

Another great aspect of mediCAD[®] Hip 3D is that it provides a way to simplify and substantiate academic papers more efficiently. The discussion and coordination during every day work will become clearer and more transparent, thus providing an increase in quality and quality assurance. We have received many positive reviews and great feedback from those who use mediCAD[®] Hip 3D and we would be happy to provide you with these references. We fully stand behind our product and believe that the concept and user-friendly software will win you over! You will also find the implant database, which is updated on a monthly basis, to be greatly beneficial. You can arrange a free, non-binding demonstration of our system and see the benefits for yourself.

We look forward to hearing from you
imediCAD (Beijing) Medical Technology Co.,LTD

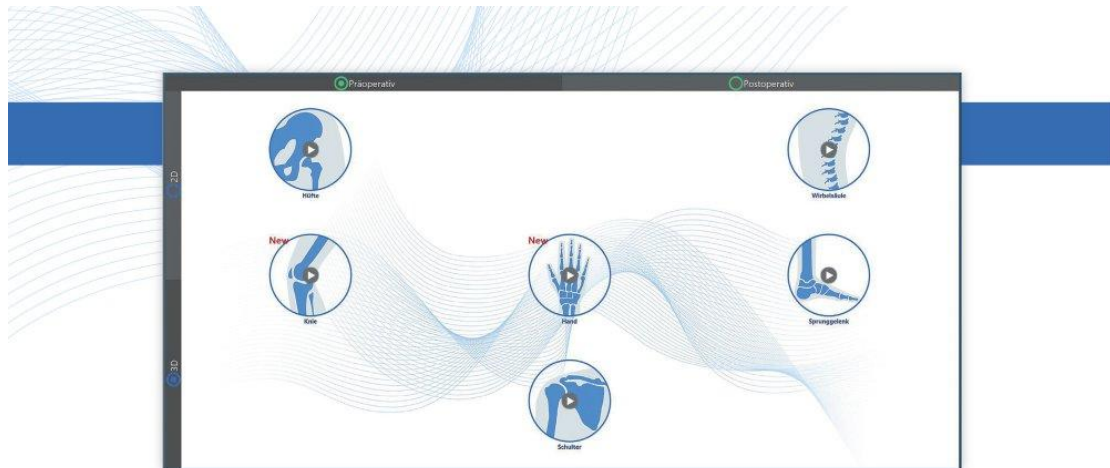
Let us present the solution,our sales team is happy to help and will answer any further questions you have:

Tel: +86 18600871500

+86 13801117211

E-Mail:product@imedicad.com

henry@hosplink.com



mediCAD[®] Hip 3D opens up entirely new possibilities in terms of carrying out the anatomical assessment, planning and measurements of the hip, thereby implementing optimal, audit-compliant operation preparation. A modern and intuitive user interface that takes you straight to your objective and the usual, comfortable connection to an existing PACS system in your clinic are just two of the many reasons why mediCAD[®] Hip 3D is an indispensable tool for your day-to-day work.

mediCAD[®] Hip 3D was developed in close collaboration with specialists in the field of hip surgery. For you and your patients, this means:

- The world's first and most widely used planning program.
- Free interface to PACS via mediCAD[®] Query Client.
- More than 20.000 clinical users worldwide.
- Incorporation of the most common planning methodologies.
- Modular design with highly effective expansion modules.
- Easy of use.
- Ready for immediate use in 23 languages.
- Legally secure documentation of all processes.
- Time savings of up to 90% compared to conventional planning.
- More than 130 international implant manufacturers with more than 500.000 templates already integrated.
- mediCAD[®] is continuously developed in collaboration with doctors, for doctors.
- Special high-performance modules are continuously developed and available.
- mediCAD[®] is being used in medical industry for 20 years.
- On the international market, mediCAD[®] is distributed under the name IMPAX Orthopaedic Tools (by AGFA Healthcare). Both programmes are licensed as medical product.
- mediCAD[®] is certified according to the 93/42/EWC and EN ISO 13485 directives and approved as a medical product.
- MDSAP certified 512917MDSAP16 (AUS, BRA, CND, USA).
- 510(k) clearance for mediCAD[®] was granted by the FDA (K170702).
- mediCAD[®] is certified as medical product in the Russian Federation. Certification 2017/6580 of 2017-12-15.
- mediCAD is authorized in Japan (JMDN CODE 70030012).

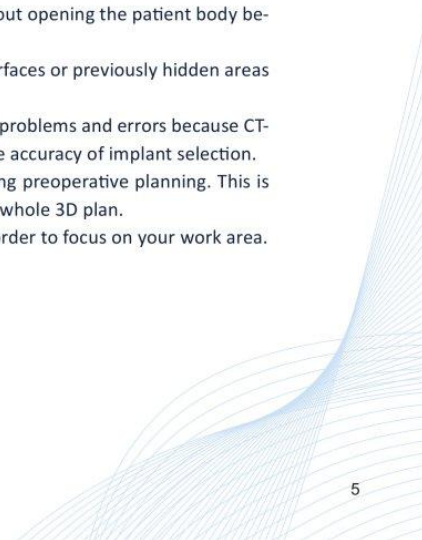


mediCAD® 3D Hip enables completely new possibilities of anatomic evaluation as well as realizing plannings and measurements of the hip for revision-free operation preparation. A modern intuitive and a directly to the goal guiding user interface, as well as the comfortable link to the PACS of your clinic are only two of many attributes which make **mediCAD® 3D Hip** an indispensable tool for your daily work.

mediCAD® 3D Hip has been developed in close collaboration with specialists of hip surgery. Continuous development and improvement are core tasks of our enterprise.

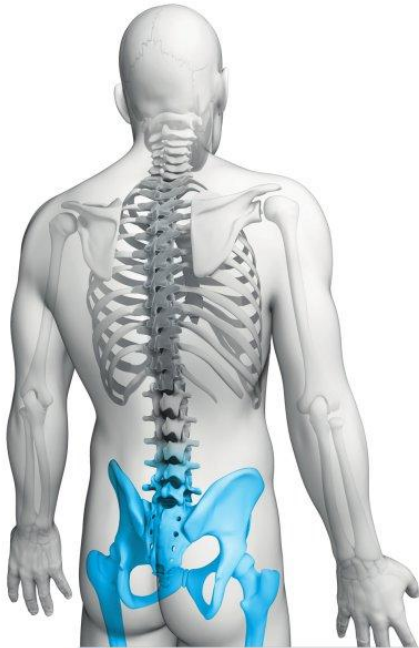
Your benefits

- Orthopaedic surgeons can analyse the anatomy of a patient and plan the operation in a way which wouldn't be possible with the present standard 2D imagery.
- The supply of patients with complex orthopaedic injuries is optimised and specific plans according to patients needs can be generated.
- The 3D software enables orthopaedic surgeons to precisely plan and prepare different scenarios in order to avoid stress, save time and minimise intraoperational risks. A well documented workflow is created in order to meet legal requirements.
- 3D planning may improve the understanding of complex cases. The solution may also facilitate a correct diagnose and planning of operations. This support is invaluable if you strive for better results and more efficiency in operating rooms.
- 3D Presentation simplifies the visualisation of pathology without opening the patient body before.
- By using bone segmentation, the user may examine joint surfaces or previously hidden areas before deciding on a therapy plan.
- The 3D software immediately removes potential calibration problems and errors because CT-data visualise automatically the correct size and improve the accuracy of implant selection.
- Primary implants can be blanked for revision planning during preoperative planning. This is particularly advantageous in cases where implants hide the whole 3D plan.
- Bone areas can be separately segmented and blanked in order to focus on your work area.



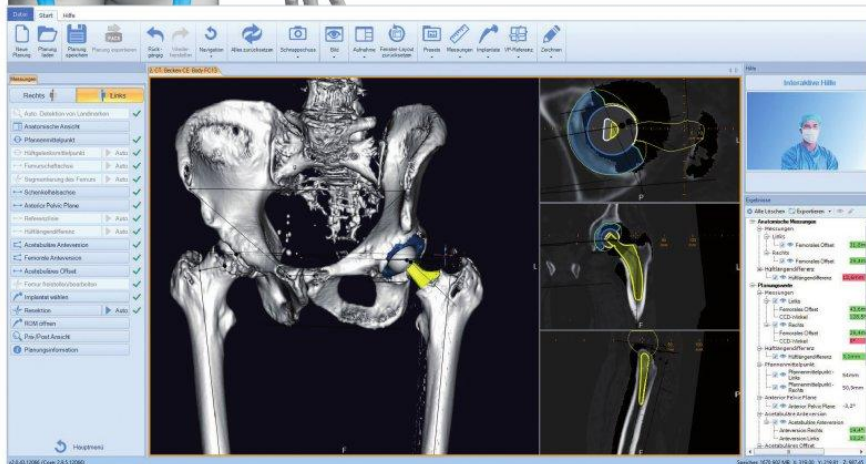
Import assistant/interactive help

mediCAD® Hip 3D offers the freedom to save the location of your patient data and images wherever you like. You can load the images from PACS system via the new mediCAD® interface Query Client® as well as access a plan you have previously saved, allowing you to more quickly reach a work area for immediate processing.



mediCAD
Query Client

While you are creating your surgical plan, interactive help will be available that provides support in the form of a schematic representation and a list of all procedural steps. Additionally, clear informational texts and images will be used to highlight the respective areas and functions in the application. Finally, your work will be accelerated through constant access to an overview of all supporting information.



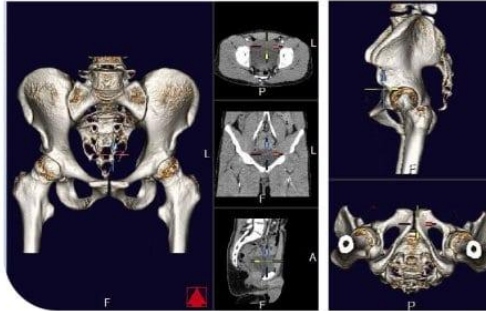


Anatomical 3D and 2D view

mediCAD[®] Hip 3D offers you numerous displays with an assortment of images and plans for the anatomical view. This software provides access to view the 3D image from a variety of perspectives, which is, at times, necessary.

In addition to the 3D model, that can be viewed from all sides, you can also show individual 2D slices in an axial, sagittal or coronal plane. You can also display and view the 3D model from several different directions at the same time.

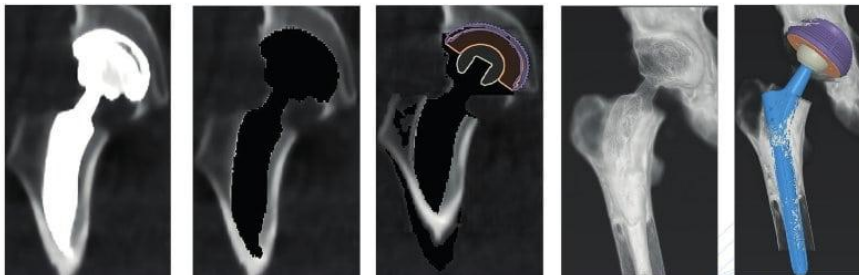
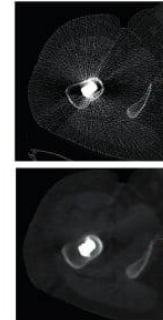
Furthermore, in order to better access the pathological condition, you can switch to the anatomical view.



Planning of a hip revision

The indications that a prosthetic replacement is needed vary and the cause must be clarified before surgery. Doing a hip revision is a long and complex surgery. It requires extensive planning and the use of specialized implants and tools.

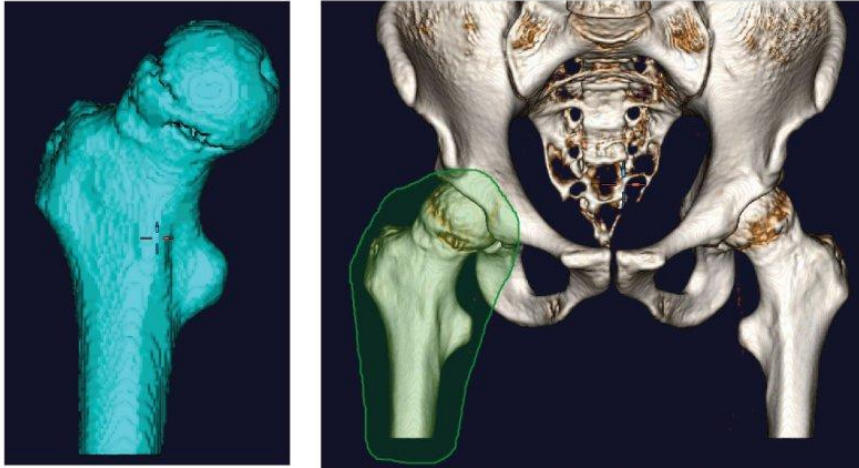
mediCAD[®] Hip 3D reduces distracting metal artefacts. Implants that are essential for the planning are going to be blanked. In addition, mediCAD[®] Hip 3D offers a variety of modular and revision specific implants already included in its huge database.



Bone segmentation and osteotomies

Manual segmentation

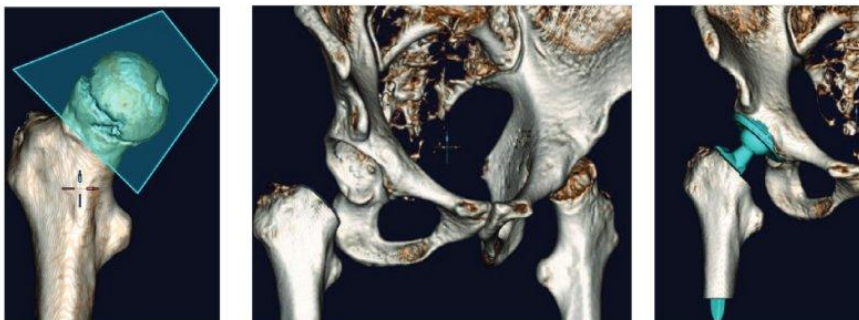
Manual segmentation is an important component of preoperative planning in hip endoprosthesis. This segmentation can be used to freely display certain areas of the bone in a high-resolution, three-dimensional image. For example, segmentation can be used to make the femur more visible to determine the condition of the joint prior to surgery.



Osteotomies

When you set a cutting area, you can carry out an osteotomy and move or rotate the areas to be resected as needed. All of the dimensions are automatically adapted and reflect the new dimensions. This allows simulation and testing of a variety of scenarios, resulting in the best possible result for your patient.

In combination with manual segmentation, the femur can be cropped by inserting the resection line (osteotomy) and the ball of the hip can be removed.



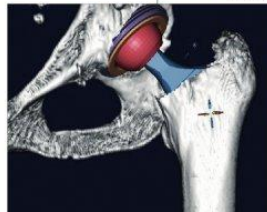


The medicAD[®] Hip 3D module supports you with hip endoprosthesis planning. A wide range of classical measurements can be carried out and recorded:

- Precisely determine the center and the diameter of the socket
- Precisely determine the center and the diameter of the hip joint
- Automatically determines the femoral offset
- Automatically determines the CCD angle
- Determines differences in hip length
- Determination of the acetabular anteversion
- Calculation of the femoral anteversion
- Acetabular offset
- Distance and angle dimensioning

The measurements are displayed both directly in the 3D model and recorded in a structured list of results. Where possible, an evaluation is carried out in compliance with the normal range and then values and results outside of this range are shown using colors.

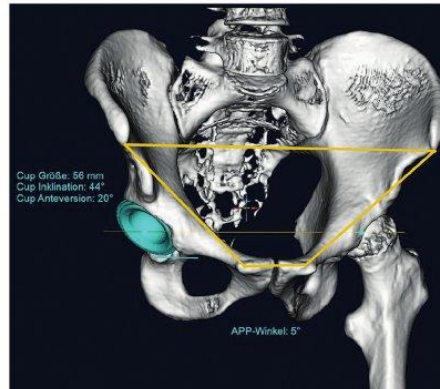
Ergebnisse	
Alle löschen Export	
Beinlängendifferenz	
Huftlängendifferenz	5,35mm
Huftlängendifferenz	0mm
Huftlängendifferenz	
CCD-Winkel	
CCD-Winkel	133,14°
Femoraler Offset	
Femoraler Offset	39,62 mm
Acetabuläres Offset	
Acetabuläres Offset	36,28 mm
Femorale Anteversion	
Femorale Anteversion	52,01°
Acetabuläre Anteversion	
Links	8,16°
Rechts	8,72°



Measurement of the pelvic tilt with the „Anterior pelvic plane“ (APP)

The alignment of the hip joint components is very important in hip arthroplasty and hip replacement. For the alignment of the acetabulum, the pelvic coordinates are reconstructed on the 3D image. The anatomical landmarks are placed on the anterior superior iliac spine and the pubic tuberculum. Defining these landmarks creates the „anterior pelvic plane“ (APP).

The pelvic tilt is defined as the angle between this anterior pelvic plane (APP) and a vertical line in an upright position. Important interindividual variations of this angle may affect the final functional anteversion of the acetabulum and improve the positioning of the acetabular cup.

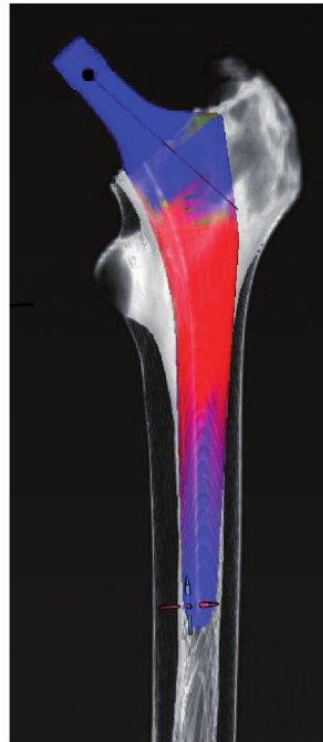
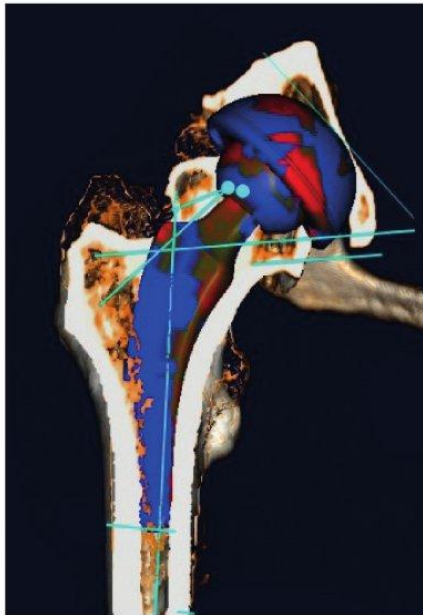


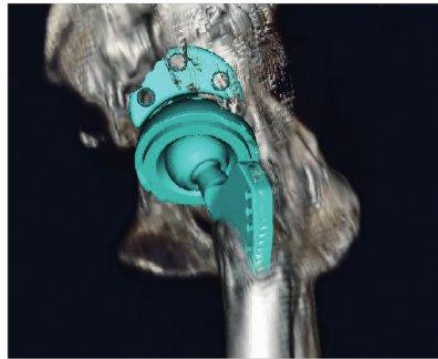
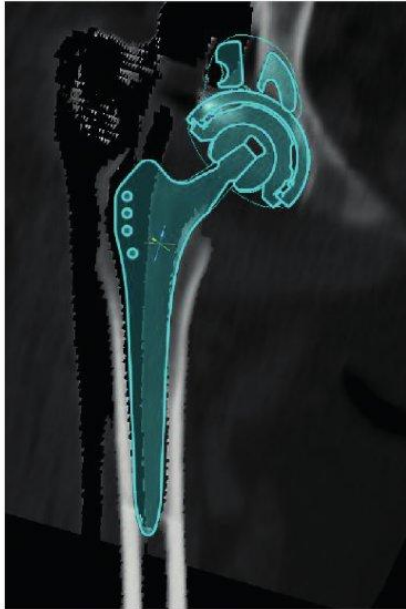
View and implant-bone contact visualization



Since each image and each plan is different and follows a different objective or requires a different approach, you can use the transparent view to better observe the implants used in their respective positions. It is often necessary to visually determine the quality of the bone at the planned implant position. The Hounsfield visualization provides support on this.

High and low density values can be observed at the planned implant location. Higher or lower primary stability can therefore be assumed when inserting the implants. The distance visualization of the Hounsfield units can be used to create concepts for preoperative planning in order to determine the correct preparation technique and the consecutive prosthetic solution.





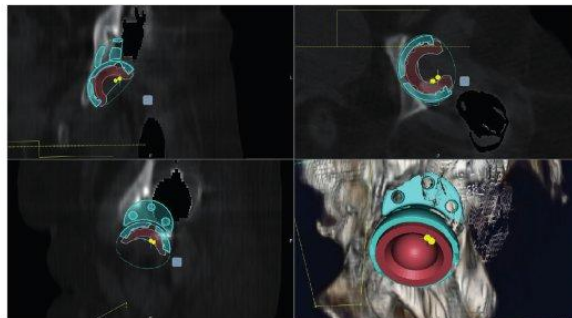
The easy options provided by medicAD® Hip 3D can compile the individual implant components using the implant configurator and place this into the 3D model (CT images of the patient).

In addition to this, the implants can be adjusted, rotated, moved or changed to another implant type as a group or individually.

The implant configurator enables you to select various hip implants. You can filter your implants by manufacturer, type, material, size or simply your personal favourites.

The implants you have selected and frequently used are compiled in a list of results with all relevant parameters and can therefore be used for further planning and preoperative preparation.

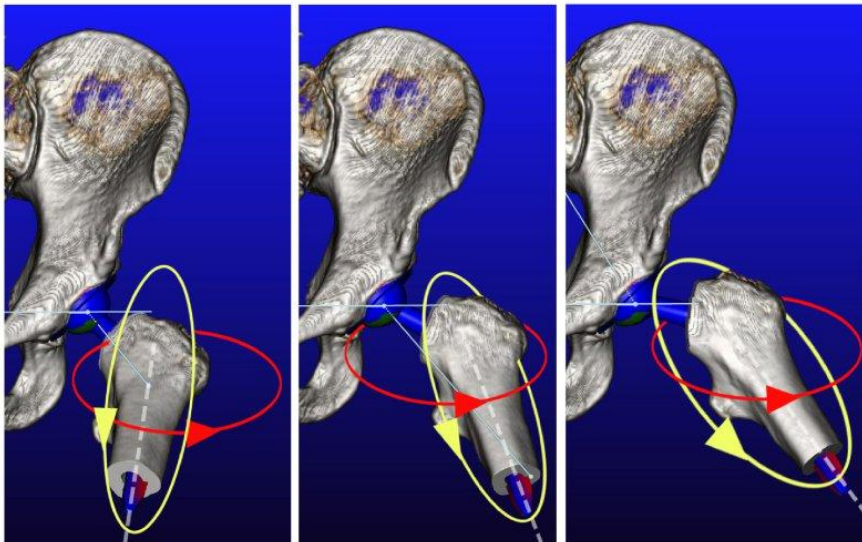
More than 15 years of collaboration with a large number of international implant manufacturers means that medicAD® Hip 3D includes the latest expertise. It also includes an implant database that is supplemented and updated monthly.



ROM (Range of Motion) simulation

The abnormal shape of the bones that lead to hip impingement is sometimes not identified by classical radiology. The complex relationship between the shape of the cup shell, the shape of the femoral head and how these interact with one another during movement is difficult to picture without visual representation. Hip problems are dynamic and multi-dimensional. The current static imaging leaves a lot to the imagination.

The simulation function in the planning software with movement simulations for hip impingement closes this gap. It offers an interactive 360° 3D view of the hip joint, while moving. The function can be used to determine which movements may be restricted after the implant that are due to the shape of the pelvic bone.



Planning report



In addition to the comfortable link to PACS and the revision-save digital documentation of the planning, mediCAD® offers the possibility to easily save or print the planning as a report.

Once you have finished your planning, the software creates a structured report which reflects and lists all relevant information, such as patient-ID, measurements or planned implants. This report can be used for discussion with colleagues or can be given to the patient during the consultation. This saves times and creates transparency and security.

Planning Report

Patient specific data

Name: DCA Sex: Male
 Birth date: 1971-01-01 Age: 42
 Gender: M Height: 180 cm
 Date of birth: 01.01.1971 Weight: 80 kg

Information specific data

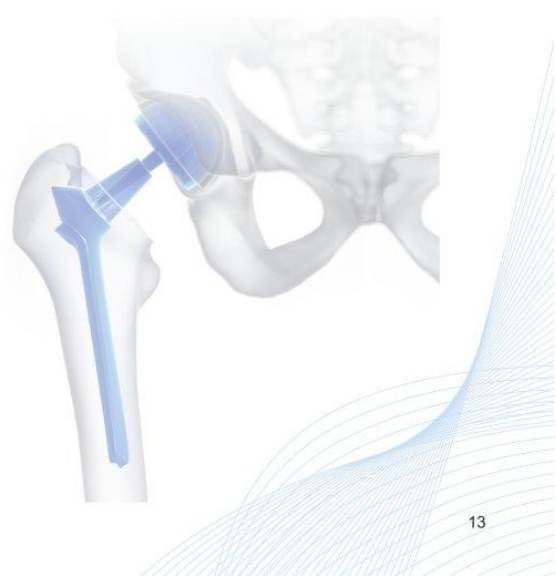
Surgeon: Dr. Müller
 Hospital: Orthopedic Clinic
 Pathology: -

Implants

Implant	Manufacturer	Type	Size
Cup	Medacta	Medacta Cup System, Medacta Plus-1, Right	52.0
Stem	Medacta	Medacta Cup System, Bionic delta, BIONICDELTA, Right	G / 32
Stem	Medacta	Medacta Cup System, Bionic delta, BIONICDELTA, Right	A
Head	Medacta	Medacta Bionic delta, Bionic delta 127/14, 32 L, Right	

Measurements

Measurement	Preoperative	Planned
Cup Diameter (Sagittal)	52.0mm	52.0
Periacetabular Offset (Sagittal)	40.0mm	41.0mm
Acetabular Angle (Sagittal)	-	13.0°
Acetabular Anteriorisation (Sagittal)	55.1°	55.1°
Acetabular Offset (Sagittal)	31.0mm	-
Cup Diameter (Coronal)	52.0mm	-
Periacetabular Offset (Coronal)	40.0mm	40.0mm
Acetabular Angle (Coronal)	-	13.0°
Acetabular Anteriorisation (Coronal)	51°	-
Acetabular Offset (Coronal)	31.0mm	-
Hip Length Difference	5mm	7.0mm



More Functions

mediCAD® Services / 3D Printing

It will soon be possible to access further mediCAD Hectec GmbH services direct from the mediCAD® software. mediCAD Hectec GmbH's new service portal, mediCAD® Services, will be your port of call, be it for ordering 3D prints, preparing customized implants or logistics projects.

The first service to become available is provided by mediCAD® 3D Printing, which will allow you to order a 3D model of a previously segmented bone structure based on your planning direct from mediCAD® 3D Hip.

As the software is directly integrated into mediCAD®, requests for services are forwarded to mediCAD® Services (services.mediCAD.cloud). The ordering process for a 3D print is straightforward and systematic, and the model is shipped to you within a maximum of five working days (for recipients in Germany).



services.mediCAD.cloud



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imediCAD (Beijing) Medical Technology Co.,LTD
Opalstraße 54
DE- 84028 Altdorf

Hardware recommendations

mediCAD® 3D Spine requires Windows 7-10, 64-bit with .NET Framework 4.6.1 and an up-to-date processor with a minimum of 4 x 2,6 GHz and at least 8 GB RAM. The recommended display resolution is 1920 x1080 – FULL HD. A diagnostic monitor is not required.

Templates

We are happy to integrate your preferred manufacturers' implants and accessory templates into the system. Please contact us for further information.

Introduction / Training

mediCAD® 3D Spine requires no previous knowledge of the program and is easy to learn. The user is guided intuitively through the program with all instructions displayed in plain language on the interface. Training usually requires approximately 3-4 hours.

mediCAD Hectec offers you skilled training sessions for every module. Both on-site and online training are available. X-ray images are imported into DICOM® format via an interface on your PAC/RIS system. **mediCAD® 3D Spine** communicates with all DICOM® interfaces, making it compatible with any PAC system. Many common image formats can also be imported.

Demo version

Order your free demo version of **mediCAD® 3D Spine**. The demo version corresponds to the full version of the program and is valid for 90 days. There are no restrictions on the functionalities or the implant database in the demo version.

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